City of Sumas
Flood Plain Planning Project
Minutes of TAC Meeting
February 3, 1997

Present: Gary DeBont, Cindy Honey, Don Peterson, Richard Grout, Bob Mitchell, Lawrence Silvis, Ed Regts, Tony Melone, David Davidson, John Matzinger, Dennis Holmstrom

Absent: George Ferguson, Brad Ferris, Ren Smith, Ernie Snider

This was the third meeting of the technical advisory committee (TAC). The purpose of the meeting was to decide which flood-management alternatives should be modeled. Davidson reminded the TAC of the limits within the project budget: funds are available to model three alternatives, and time is available to perform two rounds of modeling. For example, we could model alternative A in the first round, and alternatives B and C in a second round.

Davidson reminded the group that a separate modeling effort was now underway, funded by an FCAAP grant from the Department of Ecology. This effort involves a 1-D unsteady flow model of the overflow corridor from Everson to the Canadian border. The 1-D model will be useful in confirming the hydrograph to be used as an input to the 2-D model that was developed with PERF funds as part of this project. Unfortunately, this implies that when the 1-D result becomes available, it might produce an input value different than that used by KCM for calibration of the 2-D model. In other words, it might be necessary to re-run the 2-D existing conditions scenario in order to have the best possible 2-D model of the town. Davidson suggested that we should *reserve one of the three budgeted model runs for this eventuality*. The TAC agreed.

Davidson described some vested projects at the west end of town (i.e., Boundary Paper, IKO Pacific) and showed the extent of the fill anticipated as a result of those projects. Melone discussed the hydraulic impacts of the projects. The projects would result in a reduction of the amount of flow looping up and across Hesselgrave's Farm, and an increase in the flow to be channeled through the Special Flood Risk Zone[1] (SFRZ) adjacent to Elenbaas. Davidson suggested that in ALL modeling of future scenarios, it be assumed that those areas at the west of town are filled. Regts objected to this assumption, pointing out that such fill is an alteration of the natural conditions, which runs counter to the philosophy of the Whatcom County CFHMP process. In that process, the main argument against building a levee at Everson is that the levee would constitute an alteration of the natural system. Regts questioned how this was different. Melone and Matzinger responded that whereas the Everson levee would have the effect of fundamentally shifting the course of flood waters, the placement of fill in Sumas had no such fundamental effect, but was rather an insignificant event in terms of net effect on flood volumes and elevations at the Canadian border. Regts agreed with this in engineering terms, but said that he was still opposed on political grounds. The TAC nevertheless recommended that the fill be assumed to exist in all modeling of future alternatives.

[1] The Special Flood Risk Zone in Sumas is similar to the floodway as defined by FEMA.

Davidson and Melone then walked through three possible management alternatives they had developed in light of public testimony at the December hearing.

A) This alternative involves NO structural change, but rather a re-delineation of the SFRZ. The existing delineated SFRZ boundary is perceived as inaccurate in many locations. Local knowledge indicates that there are some heavy-flow paths that are not represented accurately by FEMA, and that there are low-flow paths that are inappropriately classified as SFRZ. Melone described a concept in which the GIS would be used to map the product of velocity and depth (VxD). The highest VxD locations would then be considered to be SFRZ. Structures within the new SFRZ would be identified as highest priority for buy-out over time. Matzinger strongly supported the VxD concept because it nicely represents the true destructive potential of the flood waters. He also believed that FEMA would accept the approach, because damage claims would presumably decrease over time. Davidson reminded the TAC that any shift in the location of the SFRZ boundary would impact the property rights of land owners. Development within the SFRZ is much more expensive than in the standard 100-year flood plain.

B) This alternative involves construction of a west-to-east levee parallel to Johnson Creek through the center of town. One possibility is along E. Third Street, which would minimize impacts in the north of town. Another possibility is along Vancouver Street, which would protect the south. Melone emphasized that either of these alternatives would reduce risk and damages in one area, while increasing them in other areas. There would be winners and losers. TAC members were not supportive of either of the alternatives described.

C) This alternative involves construction of a diversion corridor around the south end of town. A levee system would be built that would channel flood water south of the RV park, south of the Maarhuis farm buildings on Hovel Road, across the Sumas River, and northeast to the Canadian border. Flood control gates would be needed both on Johnson Creek and Sumas River in order to prevent the water from following the natural stream channel. The constructed channel would be linked to a similar channel built by the Canadians on the north side of the border. Melone said he liked the concept because there are very few stakeholders involved, just the Canadians and a few farmers near Sumas. With so few stakeholders, the project might be politically achievable. In contrast, efforts to change the amount of overflow at Everson involve the Tribes, Ferndale, Lynden, I-5, etc., and are therefore more difficult to accomplish. Melone also described a concept that he had discussed with Ken Wilson of B.C. Environment, in which the levee that directs flood water to the Barrowtown pump station is raised to such a height that water can flow by gravity through the station and into the Fraser River. The new corridor could then divert flows south of Sumas and then northeast through Abbotsford, ultimately flowing by gravity into the Fraser River. The extent of the flood plain around Sumas and Huntingdon would be vastly reduced.

   Melone emphasized that any modeling of this alternative performed at this point would be repeated in detail at some future point if the concept were further explored. The TAC decided that the diversion deserved mention and analysis in the EIS, but that the alternative should not be modeled. A simple conceptual sketch will be adequate at this stage.

Davidson asked the TAC whether there were other alternatives to be considered. Mitchell, Holmstrom, and others returned to the notion of a constructed corridor through town, but supported a south-to-north alignment more in keeping with the pattern of existing flows. Such

an alignment might protect some properties, while not unduly impacting any properties that were not already in the flow path. The group supported this concept. Concerns were raised that such a corridor would only be useful if it was linked to a similar corridor north of the border.

Davidson asked whether it would be possible to achieve greater model accuracy by using different roughness coefficients in different parts of town. Lower coefficients could be used to model areas targeted for buy-out, and higher ones in areas where there are obvious blockages caused by higher densities of development. Melone said that it would be possible to fine-tune the roughness values.

Holmstrom questioned the accuracy of the 2-D model of existing conditions, because the model was calibrated using the 1990 flood, which he believed was not representative of typical flooding in Sumas. He believed that the blockage (by hay bales) of the railroad trestle resulted in flood levels that were artificially high. Melone said that sensitivity analysis could be done to show flood heights under a variety of assumed flow volumes through town. Such an analysis could be considered to be one of the modeled alternatives, for the purposes of the budget. No conclusion was reached about whether a sensitivity analysis would be done.

In conclusion, the committee supported a strategy as follows. First, there will be no further 2-D modeling performed until the results of the 1-D modeling are available. Second, a decision will then be made about whether the existing conditions scenario will be remodeled. This decision will be made by KCM and Sumas, rather than by the full TAC, in order to keep the project on schedule. If necessary, the remodel will be performed and will count as one of the three budgeted model runs. Third, the VxD concept will definitely be modeled, with fill assumed in the industrial areas at the west of town. Both the VxD modeling and the remodel (if necessary) of existing conditions will be accomplished before the next TAC meeting on April 7, 1997. At that point we will have the VxD results and we will know whether we have one or two budgeted modeling runs remaining. A decision will be made at that point about how to use the remaining modeling budget. The south-side diversion corridor will NOT be modeled, but will be discussed as only a concept at this stage. The south-to-north corridor through town is the alternative likely to be chosen at the April 7 meeting for modeling in the second round.